

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
9 September 2005 (09.09.2005)

PCT

(10) International Publication Number  
**WO 2005/082914 A3**

(51) International Patent Classification<sup>7</sup>: **C07F 9/09**,  
9/141, 9/16, 9/38, 9/547

(72) Inventors; and

(75) Inventors/Applicants (for US only): **HASEGAWA, Yu-taka** [US/US]; Houston, TX (US). **MILLS, Gordon, B.** [US/US]; Houston, TX (US).

(21) International Application Number:  
PCT/US2004/042395

(22) International Filing Date:  
15 December 2004 (15.12.2004)

(74) Agent: **LANDRUM, Charles, P.**; Fulbright & Jaworski L.L.P., Suite 2400, 600 Congress Avenue, Austin, TX 78701 (US).

(25) Filing Language: English

(26) Publication Language: English

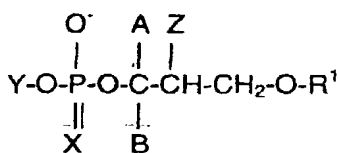
(30) Priority Data:  
60/546,601 20 February 2004 (20.02.2004) US  
60/555,235 22 March 2004 (22.03.2004) US

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

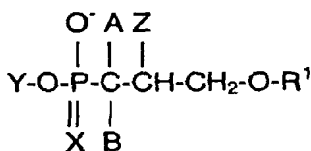
(71) Applicant (for all designated States except US): **BOARD OF REGENTS, THE UNIVERSITY OF TEXAS SYSTEM** [US/US]; 201 W. Seventh Street, Austin, TX 78701 (US).

[Continued on next page]

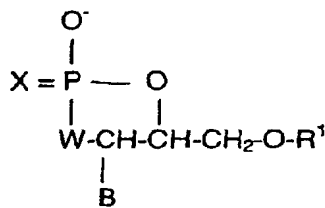
(54) Title: MODULATORS OF LYSOPHOSPHATIDIC ACID (LPA) SIGNALING



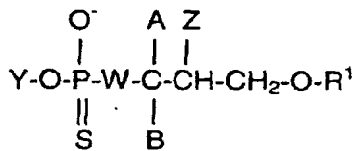
(I)



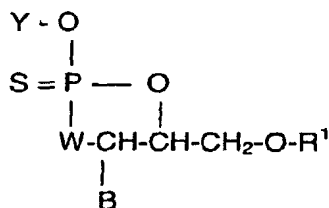
(II)



(III)



(IV)



(V)

(57) Abstract: The present invention provides phosphoric acid and phosphoric acid compounds as well as thioderivatives thereof of formula (I, II, III, IV and V).

WO 2005/082914 A3



(84) **Designated States** (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**

— with international search report

(88) **Date of publication of the international search report:**  
20 October 2005

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*